REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 1-4 are pending in the present application.

In the outstanding Office Action, Claims 1-4 were rejected under 35 U.S.C. §103(a) as unpatentable over Grunewald (U.S. Patent No. 5,986,264) in view of Kakibayashi et al. (U.S. Patent No. 5,552,602, hereinafter Kakibayashi).

Applicants respectfully traverse the outstanding ground of rejection because the outstanding Office Action fails to provide a *prima facie* case of obviousness by asserting prior art that, no matter how the prior art references are combined, does not teach every element of independent Claims 1 and 3.

To establish a *prima facie* case of obviousness, M.P.E.P. §2143 requires that three criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the references teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim elements.

In a non-limiting embodiment of the claimed invention, an electron beam emitting device emits an electron beam on an arbitrary pixel of a measured surface. A detecting unit detects a backscatter diffraction pattern produced from the arbitrary pixel as a result of the electron beam. The result of the detection is imputed into a data processing device, which analyzes the data to obtain crystal orientation data about the pixel. With the electron beam scanning the measured surface, the detecting unit detects an electron backscatter diffraction pattern from each pixel in the measured surface, and the data processing block analyzes data to sequentially obtain crystal orientation data about all pixels in the measured surface. As a

result, two-dimensional distribution data about the crystal orientation of the measured surface is obtained.[1]

Next, an ion beam emitting device emits an ion beam to slice the sample to form a section at a position inward from the measured surface. The section formed is the next surface to be analyzed. Then two-dimensional distribution data about the crystal orientation of the next surface is obtained in the manner described above.[2]

The steps described above are repeated to sequentially obtain crystal orientation two-dimensional distribution data about a plurality of measured surfaces.[3]

A data processing device stacks the two-dimensional distribution data in the correct order to construct crystal orientation three dimensional distribution data. Fig. 4 is an exemplary schematic diagram showing three-dimensional distribution data.[4]

An analysis of a preferred orientation can be performed about arbitrary two-dimensional sections defined in the three-dimensional data.[5] An exemplary arbitrary two-dimensional section defined in the three-dimensional data is illustrated in Figs. 5 and 6.

Claim 1 recites, *inter alia*, "a data processing unit configured to construct three-dimensional data about a crystal orientation distribution of said sample by stacking a plurality of two-dimensional data about said crystal orientation distribution of said sample obtained with respect to said plurality of sections on the basis of results detected by said detecting unit." Neither Grunewald nor Kakibayashi describe or suggest at least this element of Claim 1.

The outstanding Office Action acknowledges that Grunewald "fails to explicitly teach the construction of a three-dimensional data by stacking a plurality of two-dimensional data to represent a crystal orientation of a sample obtained with respect to said plurality of

[1] Specification, page 5, lines 12-25.
[2] Specification, page 6, lines 2-7.
[3] Specification, page 6, lines 8-9.
[4] Specification, page 6, lines 19-21.
[5] Specification, page 7, lines 6-7, and 19-21.

sections on the basis of results detected by said detecting unit."[6] Kakibayashi does not cure the deficiency in Grunewald.

Kakibayashi describes an electron microscope that observes three-dimensional structure.[7] Kakibayashi describes that n images of two-dimensional atomic arrangement are produced.[8] Kakibayashi states "from the n images of two-dimensional atomic-arrangement obtained as such, atomic coordinates with rough precision and atomic species are identified."[9] The atomic arrangement is combined with measurement data of atomic species to determine a three-dimensional structure of the atomic arrangement of the specimen.[10]

The data obtained by the electron microscope of Kakibayashi is shown in Figs. 1a and 1b. Placing Fig. 1b over Fig. 1a (i.e. stacking) will not yield a three-dimensional image of the specimen. As shown in Fig. 4 of the present application, two-dimensional distribution data K1 through Kn is "stacked" to create a three-dimensional image. To create a three-dimensional image by "stacking," each two-dimensional image must be created from the same inclination angle.

As described in Kakibayashi, projection images of the atomic arrangement of a specimen are observed for a first inclination angle.[11] The electron microscope then continuously observes images of the specimen while varying the inclination angle.[12] Figs. 1a and 1b of Kakibayashi depict projections of atomic structure of a specimen for two different inclination angles. Since the inclination angle of each projection is different, the projections in Figs. 1a and 1b cannot be stacked to construct a three-dimensional image of the specimen.

In view of the above-noted distinctions, Applicants respectfully submit that Claim 1 (and Claim 2) patentably distinguish over Grunewald and Kakibayashi, taken alone or in

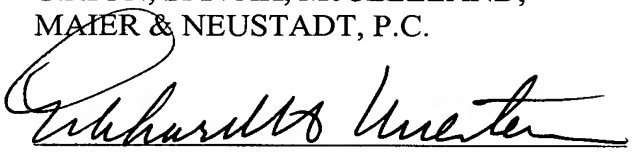
[6] Office Action, page 3, paragraph 5.
[7] Kakibayashi, col. 4, lines 41-43.
[8] Kakibayashi, col. 4, lines 48-49.
[9] Kakibayashi, col. 4, lines 54-56.
[10] Kakibayashi, col. 11, lines 10-14.
[11] Kakibayashi, col. 9, lines 56-57.
[12] Kakibayashi, col. 10, lines 63-67.

proper combination. Claim 3 is similar to Claim 1. Thus, Applicants respectfully submit that Claim 3 (and Claim 4) patentably distinguish over Grunewald and Kakibayashi, taken alone or in proper combination, for at least the reasons stated for Claim 1.

Consequently, in light of the above discussion, the present application is believed to be in condition for formal allowance and an early and favorable action to that effect is requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

EHK/JW/agm
I:\ATTY\JW\244085US\244085US_AM DUE 12-7-05.DOC